SYSTEM AND METHOD THAT RANDOMLY MAKES QUESTION AND ANSWER SENTENCES FOR ENHANCING USER'S FOREIGN LANGUAGE SPEAKING AND LISTENING ABILITIES

BACKGROUND OF THE INVENTION

5   **Field of the Invention**

The invention relates to a computer-aided language-learning system. More specifically , the invention relates to a system and method that utilizes interactive listening and speaking methodology and randomly makes questions and answers for users to improve their foreign language abilities .

10   **Related Art**

Currently, foreign language education to improve listening and speaking includes the following methods:

1. Through an electronic speech device or a teacher's voice , learners first listen carefully to contents arranged for a particular subject or some skill and then orally
15   repeat the general ideas of the material or write down what they have heard. The answers from the learners are checked with answers provided in the material or by the teacher. The drawback of this method is that a learner cannot obtain immediate feedback about whether the answer he repeats or puts down is correct. It is also possible that a learner cannot complete the whole sentence simply because s/he is
20   not familiar with a particular word.

2. With the advance in computer technology, some manufacturers have developed computer-aided learning materials with listening and speaking contents. These learning materials often are simply computerized from traditional printed materials. With the help of speech output devices, learners listen to contents arranged for a

1

particular subject or some skill and try to comprehend by themselves. They then reply to questions provided by the lesson . The system determines whether the learners are correct or not according to the standard answers. Aside from the same drawback of being non-interactive, this method cannot accurately determine whether learners fully understand the material because the questions are of the multiple choice variety and learners may make guesses.

3. Students are separated into groups with at least two people. Group members start conversion practice on a specific topic and in a certain pattern. The problem with this method is that members who participate in the conversation are learners. They may have accents that make it difficult for others to understand them . It is also inappropriate to ask one member to judge whether other members are making progress.

Two common drawbacks in the first and second methods are: (1) Learners are often limited to specific topics, skills or modes in practice, yet conversions in daily life are often random and versatile. (2) Learners are limited to passively listening without interaction and actively expressing themselves. Learners cannot use their senses and thoughts to participate in learning activities and, therefore, often miss good opportunities to learn. Although the activities in the third method include bi-directional interactions, such interactions are performed among learners, who have limited language ability . Whether or not they have correct accents, are grammatically correct, or use words appropriately sometimes cannot be judged by any member in the group. Thus, the effect of this method is greatly reduced.

In view of the foregoing drawbacks in traditional foreign language training methods, a simple and convenient computer-aided language-learning system that utilizes mature computer techniques to conquer the problems of limited contents, insufficient interactions and inadequate instruction is highly desirable.

SUMMARY OF THE INVENTION

In view of the foregoing, the invention provides a system and method that randomly makes question and answer sentences for users to enhancing their foreign language speaking and listening abilities . An object of the invention is to provide a training method that is suitable for both classroom teaching and self-learning to naturally increase students' listening and speaking abilities. During foreign language teaching, learners make sensible replies in speaking or writing to random questions provided by the computer in speaking or writing. This method can increase the learner's real-life listening comprehension and conversation abilities . It is also applicable to any person for learning any foreign language.

To achieve the above object, the computer-aided language-learning system that enhances learner's speaking and listening abilities in foreign languages through questions and answers includes a sentence pattern database comprising a plurality of questions and logical replies, a question-generating module, and a sentence-making language-learning module. The sentence pattern database is made of several question units, each question unit containing a question and at least one corresponding answer. The question-generating module randomly obtains one question from the sentence pattern database and sends the question and its corresponding answer to the learner. The sentence-making language-learning module outputs the question to the learner in speaking or writing. It also separates the corresponding answer into a plurality of separate units and shuffles the separate units to give the learner a shuffled sentence. After receiving spoken or written input from the learner, the sentence-making language-learning module compares the learner's input with its several answers and outputs the comparison result to the learner.

The disclosed method includes the steps of: establishing at least one sentence pattern sample in a sentence pattern database, outputting a question through a question-generating module, making the question through a sentence-making language-learning module, and completing the reply sentence by a user.

3

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will become more fully understood from the detailed description given hereinbelow. However, the following description is for purposes of illustration only, and thus is not limitative of the invention, wherein:

5   FIG. 1 is a system structure of the disclosed system for foreign language speaking and listening training by randomly making question and answer sentences;

FIG. 2-a is a flowchart of the disclosed method for foreign language speaking and listening training by randomly making question and answer sentences;

FIG. 2-b is a flowchart of the disclosed method for foreign language speaking and
10   listening training by randomly making question and answer sentences;

FIG. 2-c is a flowchart of the disclosed method for foreign language speaking and listening training by randomly making question and answer sentences; and

FIG. 3 is a schematic view of the disclosed embodiment.

DETAILED DESCRIPTION OF THE INVENTION

15   The invention provides a system and method for improving a user's foreign language speaking and listening abilities by randomly making question and answer sentences. A simple and intuitive computer-aided language-learning system is proposed to solve conventional problems in foreign language training in speaking and listening . A user answers in speech or text a random question provided by the computer system in speech or
20   text by simply following the hints given by the system. The disclosed system and method can effectively increase the user's abilities in speaking and listening to a foreign language and aid his or her real-life conversation ability .

This specification uses a preferred embodiment to demonstrate the feasibility of the invention. With reference to FIG. 1, a conversational foreign language speaking and

4

listening training system 100 processes all foreign language training. A user enters the system 100 by operating a UOI (User Operating Interface) 50. The UOI 50 can use a basic I/O (Input/Output) device to perform I/O, and the basic I/O device can be a keyboard, a mouse, a digital touch-control panel and a speech playing system. The conversational foreign language speaking and listening ability training system 100 includes (1) a question-generating module 120, (2) a sentence-making language-learning module 130, and (3) a sentence pattern database 140.

(1) The question-generating module 120 provides at least one question to the user. It uses a random number generator to generate a random number as the basis for generating the question . After receiving a call from a central monitoring module 110, a question signal is sent out from the question-generating module 120. The random number generator also provides a random number list for storing a random number series.

(2) The sentence-making language-learning module 130 determines whether the message input by the user is correct. After receiving a call from the central monitoring module 110, a sentence-making signal is sent out from the sentence-making language-learning module 130. The module 130 also provides a buffer and an adder. The buffer stores a comparison sample for comparing with the data in the adder. This comparison sample is the answer to some randomly generated question. The adder receives the message input by the user and processes according to the FCFS (First Come First Served) principle.

(3) The sentence pattern database 140 stores at least one sentence pattern sample. When a question signal and a sentence-making signal are detected, the sentence pattern sample data are linked to the question-generating module 120 and the sentence-making language-learning module 130.

As shown in FIG. 2-b, the random number list 145 provides a random number series from 1 through n. Through a set of specific link relations, the random numbers are linked with the sentence pattern database 145. For example, 1 corresponds to 1', 2 to 2', etc. The sentence pattern database 140 also provides a sentence pattern data list 150 to store sentence

5   pattern sample data. This sentence pattern data list 150 includes at least: (1) a sentence pattern code, which is the serial number of the sentence pattern sample data that corresponds to a random number; (2) an answer text, which is an answer presented in text; (3) a question text, which is a question presented in text; (4) an answer speech model, which is an answer presented in speech; and (5) a question speech model, which is a question presented in

10   speech.

The conversational foreign language speaking and listening training system 100 can be run on any computer executable hardware platform. The computer executable hardware platform can be a PC (Personal Computer), an NB (Notebook), or a PDA (Personal Digital Assistant). Any person skilled in the art can make various equivalent modifications to

15   implement the disclosed system 100 in other electronic devices or devices that can connect to a network.

With reference to FIG. 2-a, the procedure flow is as follows. First, at least one sentence pattern sample is established in a sentence pattern database 140 to define the sentence pattern database 140 (step 200). Afterwards, a question-generating module 120 outputs a question

20   (step 210). The steps in the question-generating module 120 are detailed in step A. A sentence-making language-learning module 130 then performs a sentence-making job (step 220). The procedure in the sentence-making language-learning module 130 is detailed in step B. Finally, the user completes the sentence-making job (step 230) and ends the procedure.

25   As shown in FIG. 2-b, a random number generator generates a random number after step A (step 212). Afterwards, a sentence pattern sample datum is obtained from the sentence pattern database 140 according to the random number (step 214). The information about the

sentence pattern sample datum has been described before and is not repeated here. The sentence pattern sample datum is formatted and output to the sentence-making language-learning module (step 216). Finally, the question speech model and the question text are employed to provide a question to the user (step 218). They are output through the UOI 50.

5   With reference to FIG. 2-c, the sentence-making language-learning module 130 obtains an answer text and an answer speech model from the sentence pattern database 140 as a comparison sample after step B (step 221). The comparison sample is stored in the buffer of the sentence-making language-learning module 130. Afterwards, the answer text is divided into individual words and shuffled, and the result is output to the user (step 222). The system

10   then receives a message input from the user (step 223). The message, which can be a text or a speech, is then sent to an adder according to the FCFS principle (step 224). Step 225 determines whether the input is complete . If the input is not complete , step 223 is repeated until it is complete . If the input is complete , then pieces in the adder are combined and compared with the comparison sample (step 226). The pieces in the adder are arranged

15   according to the message input by the user according to the FCFS principle. If the comparison result is correct, then a check sign is given to the sentence-making job (step 227), which means that the user answered correctly. If the comparison result is incorrect, then the system provides corrections and reinforced training (step 228) to prevent the user from making the same errors the next time. Finally, step 229 determines whether there is a

20   subsequent sentence-making job. If there is, then step 210 is repeated until no sentence-making job is left. When there is no more sentence-making job, step 230 follows to end this procedure.

With reference to FIG. 3, through the interface window 300 provided by the invention, the user can answer questions according to the hints in the interface window 300. The

25   interface window 300 provides questions by texts and speeches. The user can repeatedly play the questions and learn the pronunciation and intonation. The user then follows the hints 11 in the interface window 310 to make answers. In this embodiment, the question sentence is "How old are you?" The user needs to enter in speech or click numbers according

7

to the word order s/he wants. After the user finishes ordering and presses the OK button to send out his or her answer, the system automatically compares the user's result with the comparison sample. If it is correct, the interface window 320 appears and the correct sentence is read out. Through this intuitive foreign language learning model, the invention

5   can be used to learn any language in the world.